

Abstract

An intelligent power module includes semiconductor switching devices, drive circuits, a variety of detecting circuits and warning circuits for detecting a fatal abnormal condition and a precursory abnormal condition thereof in the switching devices, the drive circuits and so forth, abnormal condition detecting logic devices and drive circuits for protecting the switching devices when the detecting circuits and the warning circuits detect the abnormal condition, and control circuits and a transmission circuit for outputting a signal based on detection of the abnormal condition. The transmission circuit has an output terminal for outputting alarm signals when the fatal abnormal condition is detected, and an output terminal for outputting abnormality factor discrimination signals indicating abnormality factors contributing to the fatal abnormal condition and the precursory abnormal condition.